

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 10

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte LOUIS DISCHLER

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Appeal No. 98-1184  
Application 08/593,670<sup>1</sup>

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ON BRIEF

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Before ABRAMS, McQUADE and NASE, Administrative Patent Judges.  
McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Louis Dischler appeals from the final rejection of claims 1 through 8, all of the claims pending in the application. We affirm-in-part.

The invention relates to a method of treating a crease-sensitive web by directing a stream of gas substantially

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<sup>1</sup> Application for patent filed January 29, 1996.

tangential to the web in the direction of web movement.

Claims 1, 2 and 7 are illustrative and reads as follows:

1. A method for treating a crease sensitive web, comprising the steps of:

supplying a web to a treatment zone at a tension of between about 1 pound force per linear inch of web width and about 5 pounds force per linear inch of web width; treating the web by projecting at least one high velocity stream of gaseous fluid against only one side of the web substantially tangential to the path of travel of the web and in the direction of travel of the web such that a series of saw-tooth waves are formed in and move along the web in the direction of travel of the web; and removing the web from said treatment zone.

2. The method as recited in Claim 1, wherein the tension of the web subsequent to treatment by said gaseous fluid is no greater than approximately one-half of the tension at which the web is supplied to the treatment zone.

7. A method for treating a crease sensitive web, comprising the steps of:

supplying a web of material to a treatment zone at a tension of about 1 pound force per linear inch of web width and about 5 pounds force per linear inch of web width, wherein said material is characterized by a ratio of tensile stiffness to bending stiffness of greater than  $0.5 \text{ CM}^{-2}$ ; treating the web by projecting at least one high velocity stream of gaseous fluid against only one side of the web substantially tangential to the path of travel of the web and in the direction of travel of the web such that a series of saw-tooth waves are formed in and move along the web in the direction of travel of the web; and removing the web from said treatment

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zone.<sup>2</sup>

The references relied upon by the examiner as evidence of obviousness are:

Sack	4,055,033	Oct. 25, 1977
Dischler	4,918,795	Apr. 24, 1990

Claims 1 through 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dischler in view of Sack.

Reference is made to the appellant's brief (Paper No. 8) and to the examiner's final rejection and answer (Paper Nos. 5 and 9) for the respective positions of the appellant and the examiner with regard to the merits of this rejection. On page 3 in the brief under the "GROUPING OF CLAIMS" heading, the appellant states that "Claims 1 and 3-6 stand or fall together and separately from claim 2. Claims 7 and 8 stand or fall

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<sup>2</sup> The recitation in claim 7 of the step of supplying the web to the treatment zone at a tension of about 1 and 5 pounds force per linear inch of web width is inconsistent with the underlying specification (see page 7) and does not make sense. We have interpreted this recitation consistently with the specification (and with the similar recitation in claim 1) to require that the web be supplied to the treatment zone at a tension of between about 1 and 5 pounds force per linear inch of web width. This informality in claim 7 is deserving of correction in the event of further prosecution before the examiner.

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together and separately from claims 1-6." Thus, we shall decide this appeal on the basis of claims 1, 2 and 7, with claims 3 through 6 standing or falling with claim 1 and claim 8 standing or falling with claim 7. See 37 CFR § 1.192(c)(7).

Dischler, the examiner's primary reference, discloses "a method and apparatus for treating textile materials to soften them and to provide them with a fuller hand without significantly adversely affecting either the surface of the material or its strength characteristics" (column 1, lines 17 through 21). The

scope of textile materials amenable to such treatment is quite broad and encompassing (see column 3, line 6 et seq.). As described by Dischler,

chamber 20 is the treatment chamber wherein the fabric 10 is contacted by low pressure, high velocity air to form vibrations therein causing . . . saw-tooth waves 24 to form. The fabric 10, at very low tension, travels through the chamber 20 at a rate in the range of 5 ypm to 120 ypm. The low pressure, high velocity air directed towards the fabric causes the fabric to vibrate at 500 to 1000 Hz so that the waves 24 travel down the fabric at

about 200 ft./second. As previously discussed, the waves 24 are typically saw-tooth in shape resulting in small bending radii at the troughs. These sharp radii, combined with the fast propagation of the wave[s] down the fabric seem to break the fiber to fiber resin or finish bonds therebetween, thereby decreasing the bending and shear stiffness of the fabric to increase the flexibility and drape. Also, the passage of the saw-tooth waves down the fabric generates high accelerations, i.e., several hundred times the force of gravity, which causes the removal of loosely bound debris therefrom resulting in a smoother fabric surface [column 4, line 54, through column 5, line 6].

Dischler goes on to teach that

[i]n the preferred form of the invention . . . , the gaseous fluid employed is low pressure, high velocity air which is supplied tangentially to and opposite to the direction of travel of the low tensioned fabric 10 being conditioned. Varied effects can be accomplished, depending on the fabric being run, by varying the temperature of the gaseous fluid, speed of the fabric, tension of the fabric, direction of impingement of the gaseous fluid, etc. [column 5, lines 45 through 53].

Sack also discloses a method and apparatus for treating fabric webs to improve their drape, softness, feel and hand.

In Sack's words,

[t]he apparatus includes a wall means which defines an elongated tunnel having an inlet end and an

outlet end. Gas stream deflectors such as an array of spaced baffles, contoured surfaces, or the like, are positioned in the tunnel along opposing walls thereof. Two substantially parallel gas streams are passed through the tunnel in the direction of web travel. The gas streams flow on opposite sides of the web, impinge on the deflector means and oscillate and support the web. As each gas stream is deflected, it is directed against the web so that the web undergoes mechanical bending and oscillation which results in an alteration of bending stiffness, drape, feel and hand of the web.

A method for modifying the properties of the web contemplates providing a confined flow passageway having an inlet and an outlet, introducing the web into the passageway, introducing a pair of gas streams into the passageway only at the inlet end of the passageway, passing the gas streams through the passageway on each side of the web so that the web is supported by the gas streams and transported through the passageway, and periodically altering the direction of flow for each gas stream in the passageway so that each gas stream alternately impinges onto and deflects a portion of the web as the web is transported through the passageway [Abstract].

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test

is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In the present case, the examiner's conclusion that the combined teachings of Dischler and Sack would have suggested the subject matter recited in independent claims 1 and 7 is well founded.

To begin with, Dischler teaches, or would have suggested, a web treating method meeting all of the limitations in these claims except arguably for those requiring that the stream of gaseous fluid be projected against the web in the direction of travel of the web.

More particularly, Dischler's teaching that the web be passed through the treatment zone at very low tension would have suggested supplying the web to the zone at a tension falling within the about 1 and about 5 pound force per linear inch of web width range set forth in claims 1 and 7. In this sort of situation, an applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir.

1990). The appellant has made no such showing. Indeed, the appellant's disclosure (see specification page 7) fails to attach any particular significance to the tension range in question.

In the same vein, Dischler's comprehensive description of the type of textile materials which may be treated by the method disclosed therein would have suggested using the method to treat crease sensitive webs as broadly recited in claims 1 and 7, including those further defined in claim 7 as having a ratio of tensile stiffness to bending stiffness of greater than  $0.5 \text{ CM}^{-2}$ .

As for the limitations in claims 1 and 7 requiring that the stream of gaseous fluid be projected against the web in the direction of travel of the web, Dischler does indicate that gaseous fluid is projected against the web opposite the direction of travel in the preferred form of the method. Dischler recognizes, however, that the effect of the treatment on the web may be varied by changing the impingement direction of the gaseous fluid. Furthermore, Sack teaches that the same sort of web treatment (e.g., to improve the softness and hand

of a web) can be effected by projecting a stream of gaseous fluid on the web in the direction of travel. These teachings would have suggested modifying Dischler's method by projecting the stream of gaseous fluid against the web in the direction of web travel in order to realize Dischler's appreciation of varying the effect of the treatment on the web.

In light of the foregoing, the lack of suggestion or motivation arguments advanced by the appellant with regard to the

examiner's proposed combination of Dischler and Sack are not persuasive. Since these references support a conclusion that the differences between the subject matter recited in claims 1 and 7 and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art, we shall sustain the standing 35 U.S.C. § 103(a) rejection of these claims and of claims 3 through 6 and 8 which stand or fall therewith.

We shall not sustain, however, the standing 35 U.S.C. § 103(a) rejection of claim 2. It is not apparent, nor has

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the examiner explained, how or why the combined teachings of Dischler and Sack would have suggested a method wherein the tension of the web subsequent to the treatment by the gaseous fluid is no greater than approximately one-half of the tension at which the web is supplied to the treatment zone as recited in claim 2. The appellant's specification (see page 3) indicates that this feature is significant in preventing undesirable web creasing.

In summary and for the above reasons, the decision of the examiner to reject claims 1 through 8 is affirmed with respect to claims 1 and 3 through 8 and reversed with respect to claim 2.

AFFIRMED-IN-PART

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NEAL E. ABRAMS	)	
Administrative Patent Judge	)	
	)	
	)	BOARD OF PATENT
JOHN P. McQUADE	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
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